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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/658,468 | 09/10/2003 | Brian A. Vaartstra | M4065.0242/P242-B | 2208 |
| 24998 | 7590 | 04/04/2005 | EXAMINER | |
| DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP | | | SANTIAGO, MARICELI | |
| 2101 L Street, NW | | | ART UNIT | PAPER NUMBER |
| Washington, DC 20037 | | | 2879 | |

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JK

| | | | |
|------------------------------|-------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/658,468 | VAARTSTRA, BRIAN A. | |
| | Examiner | Art Unit | |
| | Mariceli Santiago | 2879 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8-12 and 47-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8-12 and 47-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on November 10, 2003, has been entered and acknowledged by the Examiner.

Cancellation of claims 2-7 and 13-46 has been entered.

Claims 1, 8-12 and 47-52 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Miyake et al. (US 5,136,207).

Regarding claim 1, Miyake discloses a method of forming a layer of fixed geometry for use in a device having at least two device layers (Fig. 9), the method comprising the steps of providing a substrate (111) for the device, depositing a layer of photoresist (112) on the substrate, forming openings (Fig. 9c) in the layer of photoresist that expose portions of the substrate, and depositing a precursor¹ in a substantially liquid form (slurry², Column 8, lines 23-45) in the openings of the photoresist to form at least one layer (115, Figs. 9d-e) of fixed geometry.

¹ One that precedes and indicates, suggests, or announces someone or something to come

² A thin mixture of a liquid, especially water, and any of several finely divided substances, such as cement, plaster of Paris, or clay particles

Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al. (US 5,509,840).

Regarding claim 1, Huang discloses a method of forming a layer of fixed geometry for use in a device having at least two device layers (Column 1, lines 27-30) the method comprising the steps of providing a substrate (10) for the device, depositing a layer of photoresist (22) on the substrate, forming openings (26) in the layer of photoresist that expose portions of the substrate, and depositing a precursor in a substantially liquid form (solution³, Column 4, lines 6-10) in the openings of the photoresist to form at least one layer (30, Column 4, lines 6-10) of fixed geometry.

Regarding claim 8, Huang discloses a method wherein the device is a flat panel display composed of a cathode and a faceplate, wherein the faceplate is composed of the substrate provided in the providing step and a conductive layer (Column 3, lines 24-28), and wherein the at least one layer of fixed geometry is formed as at least one spacer on the faceplate (Column 5, lines 45-53) of the flat panel display for maintaining a distance between the cathode and the faceplate in the flat panel display (Column 3, lines 24-28).

Regarding claim 9, Huang discloses a method wherein the depositing step further comprises the substep of forming a plurality of spacers uniformly deposited on the substrate (Figs. 14-15).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 47-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Poco et al. (US 6,168,737).

³ a liquid containing a dissolved substance

Regarding claim 47, Poco discloses a method of forming a layer of fixed geometry (fig. 2C) for use in a device having at least two device layers, the method comprising the steps of providing a substrate (22) for the device, and depositing a sol-gel precursor in a substantially liquid form on a top surface of the substrate to form at least one layer of fixed geometry (Column 4, lines 20-33).

Regarding claim 48, Poco discloses a method wherein the device is a flat panel display composed of a cathode and a faceplate, wherein the faceplate is composed of the substrate provided in the providing step and a conductive layer, and wherein the at least one layer of fixed geometry is formed as at least one spacer on the faceplate of the flat panel display for maintaining a distance between the cathode and the faceplate in the flat panel display (Column 4, lines 20-33, where a glass electrode plate for an imaging display device, is placed on top of the mold 14, as shown in FIG. 2B, optionally, the filled mold and substrate 22 may be inverted, as shown in FIG. 2C).

Regarding claim 49, Poco discloses a method wherein the depositing step further comprises the substep of forming a plurality of spacers uniformly deposited on the substrate (Fig. 2C).

Regarding claim 50, Poco discloses a method wherein the depositing step further comprises the substep of forming at least one spacer having a circular cross-sectional shape normal to a top surface of the substrate (Column 2, lines 14-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poco et al. (US 6,168,737).

Regarding claims 51 and 52, Poco discloses the method as claimed and the further use of cylindrical or rectangular shaped spacers, however, is silent in regards to the limitation of the depositing step further comprises the substep of forming at least one spacer having an approximately I-shaped spacer, or alternatively, a T-shaped spacer. However, one skilled in the art would reasonable expect the successful production of spacers of any particular shape by means of the Poco's manufacturing method, since a change in shape is generally recognized as being within the level of ordinary skill in the art and would only required a mere change in the mold's shape. Thus, it would have been obvious to one having ordinary skill in the art to incorporate a spacer having an approximately I-shaped spacer, or alternatively, a T-shaped spacer in the method of Poco, since such a modification would have involve a mere change in the shape of the manufacturing mold component.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (US 5,509,840).

Regarding claims 10-12, Huang discloses the method as claimed and the further use of rectangular shaped spacers, however, is silent in regards to the limitation of the depositing step further comprises the substep of forming at least one spacer having a circular cross-sectional shape normal to a top surface of the substrate, an approximately I-shaped spacer, or a T-shaped spacer. However, one skilled in the art would reasonable expect the successful production of spacers of any particular shape by means of the Huang's manufacturing method, since a change in shape is generally recognized as being within the level of ordinary skill in the

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art and would only required a mere change in the openings made into the photoresist layer. Thus, it would have been obvious to one having ordinary skill in the art to incorporate a spacer having a circular cross-sectional shape normal to a top surface of the substrate, an approximately I-shaped spacer, or a T-shaped spacer in the method of Huang, since such a modification would have involve a mere change in the shape of the openings made into the photoresist layer.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 47 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,716,077. Although the conflicting claims are not identical, they are not patentably distinct from each other as shown below.

| U.S. Application SN 10/658,463 | U.S. Patent No. 6,716,077 |
|---|--|
| Claim 1 states a method of forming a layer of fixed geometry for use in a device having at least two device layers, the method comprising the steps of providing a substrate for the device, depositing a | Claim 1 states a method of forming a layer of fixed geometry for use in a device having at least two device layers, the method comprising the steps of: providing a substrate for the device, depositing a |

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| layer of photoresist on said substrate, forming openings in the layer of photoresist that expose portions of the substrate, and depositing a precursor in a substantially liquid form in the openings of the photoresist to form at least one layer of fixed geometry. | layer of photoresist on said substrate, forming openings in the layer of photoresist that expose portions of the substrate, and depositing a precursor in a substantially liquid form in the openings of the photoresist to form at least one layer of fixed geometry, wherein said step of depositing a precursor comprises the substep of flow-fill depositing a sol-gel precursor. |
| Claim 47 states a method of forming a layer of fixed geometry for use in a device having at least two device layers, the method comprising the steps of providing a substrate for the device, and depositing a sol-gel precursor in a substantially liquid form on a top surface of the substrate to form at least one layer of fixed geometry. | Claim 1 states a method of forming a layer of fixed geometry for use in a device having at least two device layers, the method comprising the steps of: providing a substrate for the device, and depositing a precursor in a substantially liquid form in the openings of the photoresist to form at least one layer of fixed geometry, wherein said step of depositing a precursor comprises the substep of flow-fill depositing a sol-gel precursor. |

Claims 48-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,716,077 in view of Poco et al. (US 6,168,737).

| U.S. Application SN 10/658468 | U.S. Patent No. 6,716,077 in view of Poco (US 6,168.737) |
|---|---|
| Claim 48 states a method wherein the device is a flat panel display composed of a cathode and a faceplate, wherein the faceplate is composed of the substrate provided in the providing step and a conductive layer, and wherein the at least one layer of fixed geometry is formed as at least one spacer on the faceplate of the flat panel display for maintaining a distance between the cathode and the faceplate in the flat panel display. | Claim 1 states the claimed method but is silent in regards to the particulars of the device manufactured by the claimed method. However, in the same field of endeavor, Poco discloses a method of manufacturing sol-gel based spacers used in flat panel displays composed of a conductive layer, i.e. a cathode, and a faceplate, wherein the spacer maintains a distance between the cathode and the faceplate in the flat panel display (Column 4, lines 20-33, where a glass |

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| | <p>electrode plate for an imaging display device, is placed on top of the mold 14, as shown in FIG. 2B, optionally, the filled mold and substrate 22 may be inverted, as shown in FIG. 2C).. Accordingly, it would be reasonable expected to one of ordinary skills in the art at the time the invention was made to use the method stated in claim 1 of Patent '077 for the manufacture of the flat panel displays structures disclosed by Poco.</p> |
| <p>Claim 49 states a method wherein the depositing step further comprises the substep of forming a plurality of spacers uniformly deposited on the substrate.</p> | <p>Poco discloses a method wherein the depositing step further comprises the substep of forming a plurality of spacers uniformly deposited on the substrate (Fig. 2C).</p> |
| <p>Claim 50 states a method wherein the depositing step further comprises the substep of forming at least one spacer having a circular cross-sectional shape normal to a top surface of the substrate.</p> | <p>Poco discloses a method wherein the depositing step further comprises the substep of forming at least one spacer having a circular cross-sectional shape normal to a top surface of the substrate (Column 2, lines 14-15).</p> |
| <p>Claims 51 and 52 state a method wherein the depositing step further comprises the substep of forming at least one spacer having an approximately I-shaped spacer, or alternatively, a T-shaped spacer.</p> | <p>Poco discloses the method as claimed and the further use of cylindrical or rectangular shaped spacers, however, is silent in regards to the limitation of the depositing step further comprises the substep of forming at least one spacer having an approximately I-shaped spacer, or alternatively, a T-shaped spacer. However, one skilled in the art would reasonable expect the successful production of spacers of any particular shape by means of the Poco's manufacturing method, since a change in shape is generally recognized as being within the level of ordinary skill in the art and would only required a mere change in the mold's shape. Thus, it would have been obvious to one having ordinary skill in the art to incorporate a spacer having an approximately I-shaped spacer, or alternatively, a T-shaped spacer in the method of Poco, since such</p> |

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| | a modification would have involve a mere change in the shape of the manufacturing mold component. |
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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS 3/30/05
Mariceli Santiago
Patent Examiner
Art Unit 2879